IN THE CLAIMS:

Please write the claims as follows:

1. (Original): A policer based on Random Early Detection (RED), comprising:

    a filter that determines a filtered virtual time debt; and

    a control law circuit that receives the filtered virtual time debt from the filter and determines whether a packet should be dropped.

2. (Original): The RED policer of claim 1, wherein a virtual time debt uses a time T in which a packet is expected to arrive and is computed using a predetermined output transmission rate.

3. (Original): The RED policer of claim 2, wherein predetermined output transmission rate is given by a traffic contract.

4. (Original): The RED policer of claim 1, wherein the filter is based on an exponential weighted moving average (EWMA) virtual time delay using the expression,

$$EWMA_k = (1-g)EWMA_{k-1} + g(VTD)_k,$$

where k indicates the presently received packet, and k-1 indicates the EWMA computed when the last packet was received, the virtual time debt (VTD) is computed by the expression: VTD = T(packet expected to arrive) − T(packet actually arrives), and g is the gain of the filter.

1 5. (Original): The RED policer of claim 1, further comprises a sampler that samples a
2 virtual time debt at a sampling interval, and transmits the sampled virtual time debt to the
3 filter.

1 6. (Original): The RED policer of claim 1, further comprises:

2 a random generator that generates a number based on the control law circuit's
3 determination as to whether a packet should be dropped; and

4 a counter that is set with the number generated by the random generator, wherein
5 the counter counts packets passing through the RED policer up to the set number, and
6 wherein the RED policer drops a packet when the counter has counted out the set num-
7 ber.

1 7. (Original): The RED policer of claim 6, further comprises:

2 the control law circuit that determines a probability of a packet being dropped
3 based on the filtered time debt exceeding a predetermined minimum threshold, and speci-
4 fies a range of numbers based on the probability; and

5 the random generator that randomly generates a number in the range specified by
6 the control law circuit.

1 8. (Original): A policer based on Random Early Detection (RED), comprising:

2 means for determining a moving average of a virtual time debt; and

3 means for determining whether a packet should be dropped based on a value of
4 the moving average of the virtual time debt.

5

1   9. (Original): The RED policer of claim 8, further comprises means for sampling a vir-

2   tual time debt at a sampling interval, and transmitting the result to the moving average

3   determining means.

1   10. (Original): The RED policer of claim 8, further comprises:

2   means for generating a random number based on the result of the packet dropping

3   means; and

4   means for counting a number of packets passing through the RED policer up to

5   the random number generated by the random number generating means, wherein the

6   RED policer drops a packet when the counting means has counted out the generated ran-

7   dom number.

1   11. (Original): A network device comprising:

2   a plurality of Random Early Detection (RED) policers, wherein each RED policer

3   includes,

4   a filter that determines a filtered virtual time debt; and

5   a control law circuit that receives the filtered virtual time debt from the

6   filter and determines whether a packet should be dropped; and

7   a packet classifier that determines which packet should go to which RED policer.

1   12. (Currently Amended): A method of policing packets in a network device, the

2   method comprising the steps of:

3   determining a filtered virtual time debt of a traffic;

4   comparing the filtered virtual time debt with a predetermined minimum threshold;

5   and if the filtered virtual time debt exceeds the minimum threshold, then

6   generating a random number that is used to determine which packet should ~~to~~ be

7   dropped.

1   13. (Original): The method of claim 12, wherein generating a random number further

2   comprises the steps of:

3   generating the random number in a range based on a level by which the filtered

4   virtual time debt exceeds the minimum threshold;

5   setting a counter with the random number; and

6   dropping a packet when the counter has counted out the random number.

1   14. (Currently Amended): A computer readable medium having instructions contained

2   therein, which when executed by a computer performs a method comprising the steps of:

3   determining a filtered virtual time debt of a traffic;

4   comparing the filtered virtual time debt with a predetermined minimum threshold;

5   and if the filtered virtual time debt exceeds the minimum threshold, then

6   generating a random number that is used to determine which packet should ~~to~~ be

7   dropped.

1   15. (Original): The medium of claim 14, wherein generating a random number further

2   comprises the steps of:

3   generating the random number in a range based on a level the filtered virtual time

4   debt exceeds the minimum threshold;

5   setting a counter with the random number; and

6   dropping a packet when the counter has counted out the random number.

1   16. (Currently Amended): Electromagnetic signals propagating over a computer net-

2   work, said electromagnetic signals carrying instructions for <u>execution on a processor for</u>

3   <u>the practice of</u>~~practicing~~ the method ~~of claim 12.~~<u>comprising the steps of:</u>

4   <u>determining a filtered virtual time debt of a traffic;</u>

5   <u>comparing the filtered virtual time debt with a predetermined minimum threshold;</u>

6   <u>and if the filtered virtual time debt exceeds the minimum threshold, then</u>

7   <u>generating a random number that is used to determine which packet should be</u>

8   <u>dropped.</u>

8

Please insert new claims 17 *et seq.*

1 17. (New) A method of policing packets in a network device, the method comprising the

2 steps of:

3   determining a virtual time debt of packets flowing through the network device;

4 and

5   determining whether a packet should be dropped based on the virtual time debt of

6 the packets.

1 18. (New) The method as in claim 17, further comprising: determining that a packet

2 should be dropped when a virtual time debt threshold has been reached.

1 19. (New) The method as in claim 17, further comprising: determining a moving aver-

2 age of the virtual time debt.

1 20. (New) The method as in claim 17, further comprising: calculating the virtual time

2 debt as the difference between a time a packet is expected to arrive and a time the packet

3 actually arrives.

1 21. (New) The method as in claim 20, further comprising: calculating the time a packet

2 is expected to arrive according to a traffic contract.

1 22. (Original): The method as in claim 17, further comprising: sampling the virtual time

2 debt at a sampling interval.

1   23. (Original): The method as in claim 17, further comprising:

2   generating a random number;

3   counting a number of packets passing through the network device up to the ran-
4   dom number; and

5   dropping a packet when the counted number reaches the random number.

1   24. (New) A method of policing packets in a network device, the method comprising the
2   steps of:

3   determining a virtual time debt of packets flowing through the network device,
4   the virtual time debt computed as a difference between an expected packet arrival time
5   established by a traffic contract and an actual packet arrival time;

6   determining that packets should be dropped when the virtual time debt of the
7   packets exceeds a predetermined value; and if so

8   choosing a packet to be dropped, the chosen packet, in response to a random
9   number; and

10   dropping the chosen packet.

1   25. (New) The method as in claim 24, further comprising:

2   generating the random number

3   counting a number of packets passing through the network device up to the ran-
4   dom number; and

5   dropping a packet when the counted number reaches the random number.

1   26. (New) A policer, comprising:

2   means for determining a virtual time debt of packets flowing through the network

3   device, the virtual time debt computed as a difference between an expected packet arrival

4   time established by a traffic contract and an actual packet arrival time;

5   means for determining that packets should be dropped when the virtual time debt

6   of the packets exceeds a predetermined value; and if so

7   means for choosing a packet to be dropped, the chosen packet, in response to a

8   random number; and

9   means for dropping the chosen packet.

1   27. (New) A computer readable media, the computer readable media containing instruc-

2   tions for execution in a processor for the practice of the method comprising the steps of:

3   determining a virtual time debt of packets flowing through the network device;

4   and

5   determining whether a packet should be dropped based on the virtual time debt of

6   the packets.

1   28. (New) Electromagnetic signals propagating on a computer network, the electromag-

2   netic signals carrying instructions for execution in a processor for the practice of the

3   method comprising the steps of:

4   determining a virtual time debt of packets flowing through the network device;

5   and

6   determining whether a packet should be dropped based on the virtual time debt of

7   the packets.